



Guidelines for Scientific Activities in Northern Canada

BOREAL INSTITUTE
LIBRARY

1384

57476

Introduction

This pamphlet contains Guidelines for Scientific Activities in Northern Canada. These Guidelines were developed by the concerned Federal agencies in the Advisory Committee on Northern Development as a follow-up to a review of federally sponsored northern research conducted in the early 1970's. The need for such guidelines arose from the Government's objectives for northern Canada and the recognized need for a concerted approach in directing research and scientific effort towards acquiring scientific knowledge in support of northern plans and programs. These guidelines receive support of, and are adhered to by, Federal departments and agencies responsible for northern research; they are thus helping to ensure that Canada's limited professional and financial resources are used effectively in support of northern objectives. Moreover, implementation of the Guidelines enhances Canadian participation in international scientific activities in the North.

Your support of the Guidelines is greatly appreciated and adherence to the Guidelines by the scientific community at large will contribute significantly to the achievement of Canada's objectives in the North.

J. Hugh Faulkner

Federal government science policy can be considered under three headings; policies for the support of science, policies for the application of scientific and technological resources, and science in public policy. Northern science involves all three of these areas.

Under the heading of support of science are included all those research and data gathering activities that are aimed at the achievement of knowledge of the physical and social environments. Such knowledge is basic to Canada's ability to define and deal with the social and economic needs of the northern residents, to manage northern resources, to determine man's impact on the environment, and to maintain sovereignty and control in the North.

Government applications of science in the North can be classified as follows:

1. To contribute to the political, social and economic development, and to support the administration of health and social programs and services.
 2. To support the development and administration of regulatory activities in areas such as resources management, maintenance of environmental standards, and arctic waters pollution.
 3. To provide science-based support services in resources management and in the transportation, communications and administrative infrastructure.
 4. To provide a capability in highly technical areas related to defence and sovereignty.
- The term science in policy describes the whole process whereby scientific knowledge and methodology contribute to the development of national strategy. This is of particular importance in relation to the North where a very careful and systematic assessment of development proposals is required to determine impacts and long term effects on the sensitive social and environmental conditions that exist.

Three fields of science dominate the Federal Government's concern in the North: human and social sciences, ecology and geosciences. Scientific

activities related to government programs invariably demand an interdisciplinary approach. The sociological aspects of northern science are of particular concern because the government has stated that its primary objective in the North is "to provide for a higher standard of living, quality of life and equality of opportunities for northern residents by methods which are compatible with their own preferences and aspirations".

The following guidelines apply:

1. In conducting scientific activities in the North, the native people must be encouraged to participate to the greatest extent possible. In scientific activities related to the people, this involvement is essential in nearly every case if the research is to be meaningful and of maximum benefit to the northern people. Every effort should be made to provide opportunities for the native people to become involved in research programs and in the uses of science and technology.
2. In research affecting the native people, there should be prior consultation leading to informed agreement, participation in the conduct of the research itself, and feed-back of results to northern communities concerned. It is the inhabitant's perception of his environment that influences his decisions. His perception of the environment therefore, as well as its physical properties, is an important element of research programs.
3. Scientific activities sponsored or supported by Federal or Territorial governments should be treated as tools or services to help in the attainment of the national goals for the North. They are not ends in themselves and can only be justified if they support one or more national objectives.
4. It is essential that in northern science programs of a multidisciplinary nature, all relevant sources of expertise are involved in the planning and implementation phases and in the analysis of results.
5. In accordance with the government policy, scientists from the academic community and industry should be involved to the maximum extent practicable in government sponsored or supported scientific activities. Wherever appropriate, the scientific programs should be carried out "by contract" with universities, non-government scientific institutions, industry, or individuals.
6. Every effort should be made to ensure that the scientific concerns are taken fully into account in the design and phasing of northern programs. Where overriding considerations force the introduction of such programs before adequate scientific assessment is possible, the promoters should be made aware of any known deficiencies in scientific knowledge, and the implications thereof.
7. In the design and implementation of programs, provision should be made for scientific evaluation of progress in relation to objectives, and to assess impacts and effects of program activities in order to undertake any necessary adjustments.
8. To ensure that the lessons of experience and the results of research already completed are recorded and available for use, and to guard against repetition of research, all useful scientific and technical information acquired from programs should be adequately reported and fed into the appropriate scientific information service.
9. All scientific programs sponsored or supported by the Federal or Territorial governments should be reviewed at regular intervals by the Advisory Committee on Northern Development through the Committee on Science and Technology to ensure that activities remain in keeping with the original purposes of the studies and their objectives. The scientific activities undertaken to meet defined needs must remain the responsibility of the accountable department or agency.

10. The amount of effort which the Federal Government devotes to increasing and broadening its information base in northern science should take into account estimated future demands of northern development. As far as possible, government research in the North should progress at a steady pace rather than on a crash basis in response to crisis demands.
11. The design of Canada's northern observational networks should be the object of careful study, in order that they yield the most useful and general data, especially in relation to variations of site and habitat. Present networks often emphasize cheap operation because of existing settlements and communications rather than good sampling principles.
12. With Canadian sovereignty extending over such a large northern region which contains many features of special scientific interest, it is important that Canada should play a significant role in international arctic research. From the government's point of view, the emphasis should be on programs aimed at the achievement of Canadian objectives; however, there will be occasions when the international scientific community wishes to pursue research projects in Canada which do not rate as priority items for the Federal and Territorial governments. In such cases, Canada not only has some obligation to assist them but may also stand to gain from the contribution made to the pool of international knowledge and the leverage which such co-operative action provides in obtaining reciprocal information of direct value to Canada from other countries.
13. Where the Federal Government initiates international co-operative scientific activities in the Canadian North, the following principles should apply:
 - a) the Canadian contribution should be defined in terms of Canadian objectives;
 - b) the leadership in co-ordinating such activities in Canada and their effective control should be provided by Canada;

- c) Canada should receive all data and all analytical results.
14. Where the initiative for co-operative international programs comes from other countries and the objectives are not priority items for Canada, the following principles should apply:
 - a) government logistic support of international scientific programs should not be considered a substitute for scientific involvement;
 - b) the need for the program and the reason for conducting it in Canada should be stated to the satisfaction of Canadian authorities;
 - c) there should be Canadian scientific participation in any significant scientific investigation in the Canadian North;
 - d) non-government sources, primarily universities and scientific institutions, should be invited to participate;
 - e) Canada should receive all data and all analytical results.

Published under authority of the
Hon. J. Hugh Faulkner
Minister of Indian and Northern Affairs,
Ottawa, 1978
QS-8126-000-BB-A3

© Minister of Supply and Services Canada 1978
Catalogue No. R2-47/1976